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Residential Capital in the United States, 1925-70

Estimates of the value of the Nation's stock of residential capital are presented for the years 1925–70. Annual estimates of gross and net stocks of residential structures computed by the perpetual inventory procedure are given in constant (1958) prices and current prices. The current-dollar net stock estimates are compared with and found to be quite similar to alternative "benchmark" estimates based on the decennial Censuses of Housing. Also, annual estimates of depreciation developed by the perpetual inventory method are compared with those now used in the national income and product accounts.

THIS article presents newly developed annual estimates of the stock of residential capital in the United States for the years 1925 through 1970, describes the methodology used, and analyzes the growth and composition of the stock.

The estimates shown in this article are a segment of a larger project to measure the entire tangible wealth of the Nation which OBE is conducting as part of an Interdepartmental Study of Economic Growth. Previous OBE work on capital stock has provided estimates of fixed nonresidential business capital[1] and provisional estimates of consumer durable goods.[2] Future research is projected to cover stocks of Government capital assets,[3] business inventories, and land.

Because of methodological problems and data deficiencies, estimates of capital stocks are less well developed than those of capital flows—saving and investment—which are found in the national income and product, input-output, and flow of funds accounts.

Methods of stock estimation

The two procedures used to derive capital stock estimates in this report are the "benchmark" method and the "perpetual inventory" method. The benchmark method involves measurement of the stock at given points in time for which Census-type data exist. Implementation of this method depends on the availability of satisfactory data of this type. Housing is one of the few areas for which it can be implemented, because detailed data are available from the decennial Censuses of Housing. However, as noted later, the Census data are by no means free of statistical problems.

Although the benchmark method is, in principle, more reliable because it is based on direct measurement of the actual stock, the perpetual inventory method is more widely used in capital stock estimation because, given the state of the available data, it presents fewer data problems than the benchmark method and provides estimates of detailed characteristics of the stock on different bases of valuation. It starts with investment flows and obtains gross capital stock estimates for given points in time by cumulating past investment flows and deducting the investment that has been discarded from the stock.

Residential stock estimates based on both the benchmark and perpetual inventory methods are presented in this article. The perpetual inventory estimates are shown annually for yearends from 1925 through 1970. Benchmark estimates were computed for 1950, 1956, and 1960, and extrapolations from the 1960 figure through 1969 were derived using periodic surveys of the

housing inventory. The two sets of estimates are largely independent and provide useful checks on each other. They are for the most part consistent. The two sets of estimates are compared and the reasons for divergences are discussed later in this article.

Because the available data permit greater scope and detail in the perpetual inventory estimates than in the benchmark estimates, this article focuses on the perpetual inventory figures.

It is possible to derive a third set of estimates using a combination of the perpetual inventory and benchmark methods. For example, estimates for the 1960's can be developed by starting with the 1960 benchmark figure, adding annual investment flows for the 1960's, and deducting annual estimates of the loss in value of the stock. This third method, yielding "benchmarked perpetual inventory" estimates, was employed to test the assumptions used in computing the benchmark and the perpetual inventory estimates.

The coverage of the perpetual inventory estimates and the data and methods used to derive them are described below. Next, the growth and composition of residential capital in the United States as shown by these estimates is discussed. Estimates of residential capital consumption derived in this study are then compared to those used in the national accounts. Finally, the benchmark estimates of the residential stock are described and the two sets of stock estimates are compared.

The Perpetual Inventory Estimates

The perpetual inventory estimates of the residential stock cover all housing—public and private, housekeeping and nonhousekeeping, farm and nonfarm,

1. Office of Business Economics, *Fixed Nonresidential Business Capital in the United States, 1925-1970*, U.S. Department of Commerce, National Technical Information Service (forthcoming).

2. Henry Shavell, "The Stock of Durable Goods in the Hands of Consumers, 1946-1958," *1970 Proceedings of the Business and Economics Section of the American Statistical Association*, 1971.

3. Estimates of the value of that portion of Government capital operated by private contractors are given in the volume cited in footnote 1.

mobile homes and conventionally built structures. This coverage is broader that than of the residential investment component of GNP, which omits mobile homes and public structures. Expenditures in the omitted categories are included in GNP, however, as parts of personal consumption expenditures for durable goods and government purchases of goods and services. (A reclassification is under consideration, which would shift expenditures on mobile homes from the durables consumption component of GNP to the residential investment component.)

Tables 1 and 2 show, in constant (1958) and current dollars, respectively, estimates of gross and net residential stocks, at yearends 1925-70, for the following types of structures:

> Total, all types
> Private nonfarm structures, 1-4 units
> Private nonfarm structures, 5 or more units
> Publicly owned structures, Federal
> Publicly owned structures, State and local
> Farm structures
> Private nonhousekeeping structures
> Mobile homes

Table 3 shows the age distribution of gross stocks and the ratio of net to gross stocks, for selected years 1925-70, for the following types of structure:

> Total, all types
> Private nonfarm structures, 1-4 units
> Private nonfarm structures, 5 or more units
> Farm structures

Table 4 shows estimates of private residential capital consumption, separated into farm and nonfarm segments. Also shown are the private residential capital consumption estimates now now used in the national income and product accounts.

The perpetual inventory estimates calculated in this study do not provide information on the composition of residential capital by tenure (owner-occupied, tenant-occupied, vacant). Because there is considerable interest in estimates of residential stocks by ten-

ure, OBE is currently preparing an allocation of the private housekeeping portion of the perpetual inventory stock estimates into owner-occupied, tenant-occupied, and vacant components. This is being done using data described later in this article in the discussion of the benchmark estimates. These stock estimates by tenure will be published in the Survey in the near future.

Investment data

For the years since 1929, the period for which comprehensive and consistent GNP estimates exist, the appropriate components of GNP were used as the annual investment flows in calculating the perpetual inventory estimates of residential stocks. The flows were extended back into the nineteenth century using data from various sources. Data sources and procedures are given in detail in the appendix to this article.

The data on public and private residential construction outlays that enter the GNP represent the value of new residential construction put in place in the United States including both new structures and additions and alterations to existing structures. Land development costs are included but not land acquisition costs nor maintenance and repair expenditures. The construction outlay data in the GNP provide the basis for computing stocks of the following types of residential structures: private nonfarm, farm, private nonhousekeeping, Federal, and State and local. For this study, private nonfarm investment data for structures and for additions and alterations were allocated between structures of 1-4 units and those of 5 or more units using data described in the appendix to this article. (The estimates of value of new private nonfarm residential construction put in place for 1-unit and 2-or-more-unit structures released by the Bureau of the Census in November 1971 were not incorporated into the stock calculations.) The investment stream for mobile homes was estimated from trade association data.

The GNP component measuring investment in residential structures includes brokers' commissions on transactions in such structures, both new and used.

If the investment flows used for residential capital stock estimation were to include commissions on transactions in existing structures, the structures that change ownership would not be valued consistently with those that do not change ownership. Many houses change hands a number of times during their lives, and the commissions on sales of a single house can amount to several thousand dollars. A house that has been sold many times would thus be valued in the stock considerably higher than an identical house that has not changed hands. It seemed desirable, therefore, to include in the investment flows used for stock estimation the brokers' commissions only on new houses. Inclusion of these commissions results in a structure entering the housing stock at a value representing its total cost to the original buyer (exclusive of the value of the underlying land) and keeping that value so long as it remains in the gross stock.

The residential stock can alternatively be calculated using the private residential investment flow exactly as it enters GNP, i.e., including commissions on used as well as new structures. The memoranda in tables 1 and 2 show the amounts by which stock estimates thus calculated exceed the stock estimates shown in those tables. Thus, to obtain the alternative estimates of gross or net stocks, the appropriate memorandum column should be added to the total stock, and to the stock of private nonfarm 1-4 unit structures, shown in the table. The commissions entering the private residential investment component of GNP, on both new and used structures, are negligible except for those on transactions in private nonfarm 1-4 unit structures.

The residential investment component of GNP includes net transfers of existing structures between the public and private sectors (offset by an entry of equal size and opposite sign in the government purchases component of GNP). Such transfers are mainly purchases of private housing by State and local governments. These structures are usually purchased to be demolished (to make way for new roads or buildings) and such transfers were treated in the stock calculations as permanent losses

from the housing stock rather than as shifts from the private to the public stock. However, Federal military housing built during World War II and transferred to State and local or private ownership after the war was moved to the appropriate sector's stock in the year of transfer.

An important type of transfer that has relevance for the stock estimates presented in this article but that does not figure in the GNP calculations is the shift of farm housing in urban fringe areas to nonfarm housing use during the past three decades. Estimates of the value of these transfers were derived from the decennial Censuses of Housing. Such transfers, like those of military housing mentioned above, affect the composition but not the size of the housing stock.

Intersector transfers of residential structures in the stock calculations are valued at original acquisition prices rather than at the prices at which they were sold secondhand. Thus, when a structure is transferred between sectors, the gross stock of the selling sector is decreased and the gross stock of the purchasing sector is increased by the original acquisition price of the structure, and the total gross housing stock remains unchanged. Similarly, the net stocks of the selling and purchasing sectors are modified by the depreciated value of the structure at the time of sale, and the total net housing stock remains unchanged. This procedure is based on the assumption that a structure which remains in residential use does not undergo any significant change in value when it is transferred between sectors.[4]

Gross stocks

The perpetual inventory estimates of gross stocks were derived by cumulating past flows of residential investment and deducting the investment that is discarded from the stock. To illustrate, assume a constant rate of investment of $10 million per year in a new type of residential structure with a life of 40 years. Abstracting from price changes, the gross stock of this type of structure, calculated as the

difference between cumulated past investment and cumulated discards, would equal $10 million at the end of year 1, $20 million at the end of year 2, and so on, reaching $400 million at the end of year 40. In succeeding years, the stock would stay at $400 million as annual investment was offset by annual discards. Under this "gross" concept, an asset enters the stock with a specific value and carries that value as long as it is in the stock. (The question of valuation is discussed below.) In other words, assets in the gross stock are not adjusted for any physical wear and tear or obsolescence which may occur during their lives.

Service lives and discards

Information on service lives of housing is deficient. Not enough is known about average lives or the dispersions of retirements about these averages.

After a review of the available evidence, it was decided to use the average service lives that were used in a study by Goldsmith and Lipsey.[5] These lives are 80 years for 1–4 unit structures, 65 years for structures with 5 or more units, and 40 years for nonhousekeeping structures. Additions and alterations were assumed to have lives half as long as these. Mobile homes were assigned a life of 16 years based on trade association data. These lives for structures are considerably longer than those used for tax purposes under IRS regulations, which permit a 50-year maximum. While it is difficult to attach precision to the lives selected, it is clear that actual lives are longer than those permitted by IRS. The evidence concerning service lives includes the age distributions of houses in the decennial Censuses of Housing, an appraiser's study of dwellings in St. Louis in the 1950's, and comparisons with the benchmark estimates developed in the course of this study.

These service lives are averages, and actual retirements from the stock should be distributed about the averages. Some housing is destroyed after a few years of use by fire or flood, while

other housing continues in use long past the average life. The pattern of retirements used in this study, a modification of the Winfrey S–3 curve,[6] is a bell-shaped distribution centered on the average life with retirements starting at 5 percent and ending at 195 percent of the average.

Valuation

Capital stock measures derived by the perpetual inventory method can be computed on various bases of valuation. Historical-cost measures are derived by valuing each item in the stock at the original price at which it was purchased new. The stock estimate for any particular year thus represents a mixture of assets valued at prices of different periods. Such measures are not particularly useful for economic analysis, and no historical-cost measures are shown in this article.

Constant-cost (or "real" or "physical-volume") capital stock measures are derived by valuing all assets at the prices of a specific period (1958 prices in this study) regardless of their actual prices in the years of original purchase. To calculate constant-cost stocks, the gross investment flows must be expressed in constant prices. This is done by applying appropriate price indexes to the current-dollar investment flows. The constant-cost stock measures the physical volume of residential capital.

Beginning with 1963, the current-dollar residential investment series which enter the GNP are deflated by the Census Bureau's price index for new one-family houses. Data for years prior to 1963 are deflated by a privately compiled residential construction cost index.[7] It is generally thought that this cost index is biased upward, resulting in an understatement of real residential investment prior to 1963, and a revision in OBE's deflation

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4. For a discussion of the valuation of intersector transfers in OBE's estimates of nonresidential business capital, see the volume cited in footnote 1.

5. Raymond W. Goldsmith and Robert E. Lipsey, *Studies in the National Balance Sheet of the United States*, National Bureau of Economic Research, 1963, Volume I, Chapter 3.

6. Robley Winfrey, *Statistical Analysis of Industrial Property Retirement*, Iowa Engineering Experiment Station, Bulletin 125, December 11, 1935.

7. For a description of the Census index, see John C. Musgrave, "The Measurement of Price Changes in Construction," *Journal of the American Statistical Association*, September 1969. The pre-1963 deflators are described in the references given in the appendix to this article referring to the methodology of the national accounts.

procedure is under study. If and when a decision is made to revise the procedure for deflating residential construction, new capital stock estimates will be prepared using the revised data. However, on the basis of the work done thus far on this question, it appears that any revision of the price indexes that might be made would have only a small impact on the estimates of the residential capital stock.

A third valuation procedure, known as current-cost valuation, expresses all items in the stock at any specified period in the prices of that period. This is done by applying price indexes to revalue the constant-cost stock estimates. The current-cost stock estimates in effect measure the dollar replacement value of residential capital.

Depreciation and net capital stocks

Assets are carried in gross capital stocks at their full value during the entire time they remain in the stock. Net stock measures, on the other hand, represent the depreciated value of the capital stock. There is no general agreement as to the correct method of computing economic depreciation,[8] the value of productive services of an asset used up each year. One widely accepted accounting method uses the "straight line" pattern, which assumes equal dollar depreciation each year over the life of the asset. Another important method uses the "declining balance" pattern, which assumes equal percentage depreciation each year over the life of the asset. The annual declining balance depreciation charge for an asset will equal a certain fixed percentage of the net (depreciated) value of the asset at the beginning of the year.

The depreciation method used to compute the net stock estimates in this article was of the declining balance type.[9] A rate of 2 percent per year was applied to the net value of 1–4 unit structures and 2.4 percent per year to the net value of housekeeping structures with 5 or more units. These rates are consistent with the evidence provided in several studies conducted in the 1930's which shows that depreciation of residential housekeeping structures tended to follow a declining balance formula with the annual rate of depreciation in the neighborhood of 2 percent of the net value.[10] Additional support for these rates was provided by the comparisons of the perpetual inventory and benchmark estimates that are discussed later in this article.

The depreciation rates used for non-housekeeping residential structures and mobile homes are higher, because of the shorter service lives involved. For all types of residential capital, the declining balance depreciation rates used in this study are equivalent to roughly 1½ times the first year percentage depreciation under straight line method.

Age of capital stocks

Information on the age structure of capital stocks is useful in analyzing the condition of the housing stock. Three measures of age structure are presented in this article: the ratio of net to gross stocks, the average age of gross and net stocks, and the age distribution of the gross stock. The net/gross ratios show the extent to which the services available in new residential capital remain intact, while the average age provides information on the absolute ages of gross and net stocks.[11] The age distribution of the gross stock shows the proportion of the stock that is of a given age.

Growth and Composition of Residential Capital Stocks

Gross stocks

The Nation's supply of housing, as measured by constant-dollar gross stocks, increased 150 percent in the 45-year period from 1925 to 1970, representing a compound annual growth rate of 2.0 percent. The stock has increased every year since 1925, except for the depression years of 1933 and 1934. The most rapid growth occurred in the 1950's, with the stock increasing at a compound annual rate of 3.3 percent over the decade. The growth rate in the 1960's was slightly above the average rate for the entire 1925–70 period.

The Nation's stock of housing has been and continues to be composed predominantly of 1–4 unit structures, most of which are single-family houses. At the end of 1970, private nonfarm 1–4 unit structures accounted for 81 percent of the value of the constant-dollar gross stock of residential structures. Privately owned apartment buildings (structures with 5 or more units) formed the next largest component, accounting for 9 percent of the stock. Farm housing accounted for 4 percent of the stock, while public housing, mobile homes, and private nonhousekeeping residential structures each accounted for about 2 percent (see table A).

Over the period 1925 to 1945, the share of private nonfarm 1–4 unit structures in the total stock was about 80 percent. The share steadily increased from 1945 until 1960, when it reached 84 percent. This was due largely to the boom in single-family housing construction in the developing suburbs of the large metropolitan areas in the late 1940's and the 1950's. In some years during this period, expenditures on private nonfarm 1–4 unit houses accounted for 90 percent of total residential investment. The stock of private nonfarm 1–4 unit houses grew at a compound annual rate of 3.7 percent during the 1950's. The rate slackened in the 1960's to 2.1 percent and the share of private nonfarm 1–4 unit houses in the total housing stock

8. "Depreciation" as used in this study is synonymous with the term "capital consumption" used in the national income and product accounts, which includes both depreciation proper and accidental damage to fixed capital.

9. Estimates of net stocks and depreciation using the straight line formula were also computed and are available on request.

10. For a summary of these studies, see Appendix B in Leo Grebler, David M. Blank, and Louis Winnick, Capital Formation in Residential Real Estate, National Bureau of Economic Research, 1956. Grebler, Blank, and Winnick relied heavily on data from the FHA comparing sales prices, ages, and replacement costs of existing houses sold in 1939. Changes in FHA appraisal procedures prevented a similar study with current data.
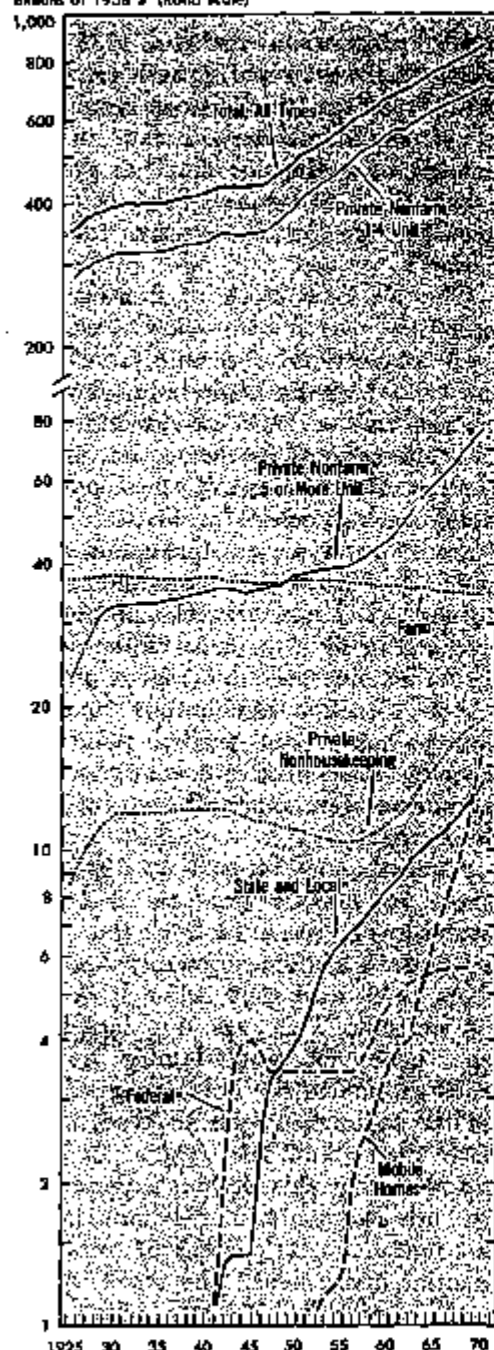
11. For a discussion of the relations between these two measures of age, see the volume cited in footnote 1.

declined to 81 percent by 1970, as new residential investment shifted toward apartments and mobile homes.

CHART 8

Constant Dollar Gross Stocks of Residential Structures, by Type of Structure

Billions of 1958 $ (Ratio scale)

*Values under $1 billion are not plotted.
but can be found in table 1.

U.S. Department of Commerce, Office of Business Economics   71-11-1

The constant-dollar gross stock of private apartments (structures with 5 or more units) grew rapidly during the late 1920's. From 1925 to 1930, its share in the total housing stock increased from 6.5 percent to 8.2 percent. The private apartment stock remained fairly constant during the depression and World War II. It increased moderately following the war, but its growth did not keep pace with the growth of 1-4 unit structures and it accounted for only 6.4 percent of the total stock by 1960. The trend changed in the 1960's, as apartments became an increasingly important part of new residential investment, and private apartments accounted for 8.6 percent of the total housing stock by 1970.

The stock of publicly owned housing was negligible prior to World War II. However, federally owned housing—consisting almost entirely of military housing—accounted for about 15 percent of all residential construction during the war years and for about 1 percent of the housing stock in 1945. The federally owned stock increased only about 50 percent from 1945 to 1970 and its share in the total housing stock declined slightly.

The stock of housing owned by State and local governments—consisting primarily of housing for low-income families—was built largely during the 1950's and 1960's. It accounted for less than 1 percent of the housing stock in 1950 and currently accounts for about 1.5 percent.

Farm housing has declined in importance over the past 45 years as the farm population has dwindled and as rural areas have become urbanized. The gross stock of farm housing has decreased about 10 percent since 1925, reflecting low rates of farm housing construction, transfers of farm housing to nonfarm use, and abandonments. Farm housing accounted for about 11 percent of the total housing stock in 1925 but only 4 percent in 1970.

The stock of private nonhousekeeping residential structures—primarily hotels, motels, and dormitories—was practically constant from 1930 to 1960 and its share of the total stock dropped from about 3 percent to about 2 percent. The stock then increased 65 percent from 1960 to 1970, largely due to a boom in construction of hotels and motels.

Mobile homes were sold in modest quantities during the 1940's and 1950's and accounted for 0.5 percent of the 1960 housing stock. Due to increased construction costs and mortgage rates for conventionally built housing, mobile homes became an increasingly important part of new additions to the housing stock in the 1960's. From 1960 to 1970, the stock of mobile homes quadrupled and its share in the total stock rose to 1.7 percent.

Net stocks

The growth and composition of the net stock of housing measured in constant dollars is essentially the same as

Table A.—Composition of Constant Dollar Gross Stocks of Residential Capital, Selected Years

[Percent]

| End of year | Total, all types | Type of structure | | | | | | |
| | | Private nonfarm | | Public | | Farm | Private nonhouse-keeping | Mobile homes |
		1-4 unit	5 or more unit	Federal	State and local			
1925	100.0	80.4	6.5	0	0	10.7	2.4	0
1930	100.0	79.4	8.2	0	0	9.6	2.6	0
1935	100.0	79.6	8.2	(*)	0	9.2	3.0	0
1940	100.0	80.0	8.8	(*)	(*)	8.8	2.9	0
1945	100.0	79.6	8.0	.9	.4	8.4	2.7	.0
1950	100.0	81.5	7.6	.6	.8	7.3	2.3	.6
1955	100.0	82.3	6.7	.6	1.1	6.2	1.8	.2
1960	100.0	84.2	6.4	.7	1.2	5.8	1.7	.5
1965	100.0	83.0	7.5	.7	1.4	4.5	2.0	.9
1970	100.0	81.3	8.6	.7	1.6	3.8	2.2	1.7

*Less than 0.05 percent.

that of the constant-dollar gross stocks, just reviewed. The behavior of the current-dollar measure of net stocks, which reflects price changes, shows the impact of inflation on the replacement value of the Nation's stock of housing.

The current-dollar value of the total stock of residential structures increased from $30 billion in 1925 to $800 billion in 1970, as shown in table 2. About five-sixths of this increase was due to price increases, while about one-sixth represented growth of the real net stock.

Several fairly distinct periods of price change can be identified. In the late 1920's, prices changed little and the increase in the current-dollar net stock was due almost entirely to an increase in the real stock. On the other hand, virtually all of the 25 percent drop in the current-dollar stock from 1929 to 1934 was due to a decrease in the price level, and price increases accounted for virtually all of the doubling in value of the stock between 1934 and 1945.

About three-fourths of the increase in the current-dollar net stock since 1945 has been due to inflation. Price increases were particularly significant in the growth of the stock in the immediate postwar period and in the 1960's, but during the 1950's the growth of the real net stock accounted for 60 percent of the increase in the current-dollar stock.

Age of capital stocks

The data on the age structure of the gross stock show the effect of the curtailment of residential investment in the depression and World War II years and of the boom in the postwar years. As shown in table 1, the average age of the gross stock of residential structures increased from 27 years in 1925 to 34 years in 1945. The average age has since declined until in recent years it has approached the level of the late 1920's. The ratios of net to gross stocks shown in table 3 follow a similar pattern, declining from 0.62 in 1925 to 0.54 in 1945 and then increasing to 0.63 during the 1960's. The age distributions in table 3 show that more than half of the 1970 housing stock had been built in the previous 20 years.

The average age of the gross stock of private apartment structures (5 or more units) increased from 15 years in the late 1920's to 26 years by the end of World War II. This trend continued until 1958, when the average age was almost 30 years. As a result of the boom in apartment construction in the 1960's, the average age had declined to 20 years by 1970. In 1970, over half of the gross stock of private apartments had been built in the past 10 years.

Farm housing, the oldest component of the stock, has steadily increased in age from an average of 36 years in 1925 to 49 years in 1970. More than half of the gross stock in 1970 was over 50 years of age.

Alternative Residential Capital Consumption Estimates

Table 4 compares the estimates of private residential capital consumption (depreciation) now used in the national income and product accounts with those computed in this study.[12] The estimates calculated in this study have two considerable advantages over those used in the national accounts: The new estimates are available in current and constant prices; and they are based on more realistic service lives and rates of depreciation.

The depreciation series for nonfarm housing used in the national accounts is valued in terms of historical costs and thus reflects a mixture of the prices of all the years in which the investments being depreciated were made.[13] The depreciation rate used is 2 percent per year of the estimated *gross* stock. The estimated gross nonfarm residential stock used for this purpose is derived by starting with a Census-based historical-cost estimate of the 1940 stock, adding the NIA estimates of annual residential investment, and deducting estimates of demolitions, abandonments, and transfers to nonresidential use, all in historical costs.

The depreciation rate of 2 percent, which is equivalent to straight line depreciation over a 50-year service life, is generally considered to be excessive as a measure of actual depreciation. The rate used in this study of 2 percent [14] per year of the net stock, together with the longer service lives, result in considerably less depreciation than the 2 percent rate applied to the gross stock. With the rate used in this study, an asset depreciates 39 percent in 25 years, 63 percent in 50 years, and 86 percent in 100 years, compared with 50 percent in 25 years and 100 percent in 50 years with the rate used to calculate the NIA estimates.

As shown in table 4, the effect of the lower depreciation rate is outweighed in most years by the revaluation of the depreciation series to current prices. For example, the current cost estimate of 1969 residential depreciation is $4.8 billion or about 40 percent more than the estimate now used in the national income accounts.

Comparisons of Alternative Estimates of the Housing Stock

How the benchmark estimates were derived

Alternative "benchmark" estimates of the nonfarm housekeeping portion of the housing stock were derived for 1950, 1956, and 1960 using data from the 1950 and 1960 Censuses of Housing and the 1956 National Housing Inventory, with extrapolations through 1969 using data from periodic household surveys.[15] The benchmark estimates are of the market value of net stocks of private nonfarm housekeeping residential structures. The basic data used for the benchmark estimates provide measures of the market value of net stocks of residential real estate (structures and land combined) in current-cost valuation by tenure (owner-oc-

12. For a similar comparison of alternative measures of corporate depreciation, see Allan H. Young, "Alternative Measures of Corporate Depreciation and Profits," SURVEY OF CURRENT BUSINESS, April and May 1968.

13. The depreciation series for farm housing used in the national accounts is based on a perpetual inventory calculation done by the Department of Agriculture and is valued in current prices. The series probably overstates farm residential depreciation because of an inadequate allowance for transfers to nonfarm use.

14. A rate of 2.0 percent is used for 1-4 unit structures and higher rates are used for the other components of the housing stock. Since these other components represent a fairly small portion of the total housing stock, the implied overall rate is close to 2 percent.

15. The Census data were taken from: U.S. Bureau of the Census, 1960 Census of Housing (several volumes); 1960 Census of Housing (several volumes); 1956 National Housing Inventory (several volumes). The survey data were taken from: U.S. Bureau of the Census, Housing Vacancies, Current Housing Reports, Series H-111 (quarterly); George Katona, et. al, Survey of Consumer Finances, Survey Research Center, University of Michigan (annual).

Table B.—Benchmark Estimates of Value of Nonfarm Housekeeping Residential Real Estate (Excluding Mobile Homes), by Tenure, Selected Years

[Billions of dollars]

Year	Total	Owner-occupied	Renter-occupied	Vacant
	Structures and land			
1950 (Apr. 1)	226.5	157.6	65.3	3.9
1956 (Dec. 31)	437.1	312.4	106.5	11.2
1960 (Apr. 1)	544.8	360.0	137.6	17.2
1968 (Dec. 31)	871.7	648.1	204.9	18.7
1969 (Dec. 31)	948.2	711.5	216.5	21.2
	Structures			
1950 (Apr. 1)	177.5	122.9	51.9	3.0
1956 (Dec. 31)	334.0	242.1	83.3	8.6
1960 (Apr. 1)	411.6	292.6	106.2	13.0
1968 (Dec. 31)	630.6	471.1	154.7	13.8
1969 (Dec. 31)	693.4	520.3	163.2	14.0
	Land			
1950 (Apr. 1)	48.7	34.5	12.4	.8
1956 (Dec. 31)	103.1	75.3	25.2	2.6
1960 (Apr. 1)	133.0	97.4	31.4	4.2
1968 (Dec. 31)	282.1	177.0	50.2	4.9
1960 (Dec. 31)	249.8	191.2	53.3	5.3

cupied, renter-occupied, vacant). The estimates were allocated between structures and land on the basis of a study by Manvel [15] based on data from the 1957 and 1967 Censuses of Governments. The segments of the housing stock not covered by the benchmark estimates—farm housing, non-housekeeping structures, and mobile homes—accounted in 1970 for about 8 percent of the total housing stock as estimated by the perpetual inventory method.

The benchmark estimates for 1950, 1956, and 1960, based on the Census data, and the extrapolations from the 1960 figure to 1968 and 1969, are given in table B. When data from the 1970 Census become available (probably in 1972), a 1970 figure can be derived and the extrapolation procedure can be evaluated. [17]

The 1950 and 1960 Censuses and the 1956 National Housing Inventory provided counts of owner-occupied, renter-occupied, and vacant housing units and various data on housing values which

were used to derive the 1950, 1956, and 1960 benchmark estimates. The owner-occupied component was based on reports of market values by homeowners. The renter-occupied component was based on rents reported by tenants and rent-to-value ratios reported by landlords. [18] The estimates for vacant housing available for sale and for rent were based on expected selling prices and expected rents of these units as reported by owners.

The estimates for the years since 1960 were obtained by extrapolating the data on number of housing units and average values reported in the 1960 Census. Annual estimates of the number of housing units and their distribution by tenure and values of vacant units were derived from data collected in the Census Bureau's Current Population Survey. Annual estimates of values of occupied units were derived from data collected in the Census Bureau's Quarterly Household Survey and the University of Michigan's Survey of Consumer Finances.

The structures-land allocation was based on Manvel's estimates of the ratio of the average value of residential land to the average value of residential land plus structures for 1956 and 1966. His estimates were based on value figures obtained from the 1957 and 1967 Censuses of Governments by adjusting values assessed on structures and land for tax purposes by local governments to market values on the basis of samples of sales that occurred during the last 6 months of 1956 and the last 6 months of 1966. Manvel's ratios were interpolated and extrapolated by the movement of the annual ratios of the value of land to the value of land plus structures for existing houses sold with FHA-insured mortgages.

Manvel's study also provided independent evidence to evaluate the benchmark estimates. He developed estimates of the value of "urban" residential one-family property (structures

and land) for the last 6 months of 1956 and the last 6 months of 1966 based on the surveys mentioned above. In the next section of this article, these estimates are compared to the estimates based on the 1956 National Housing Inventory benchmark and the 1966 extrapolation from the 1960 Census of Housing benchmark.

Comparison of the perpetual inventory and benchmark estimates

The benchmark procedure provided estimates of net stocks of nonfarm housekeeping structures which are essentially independent of the perpetual inventory estimates. They thus provide a check on the depreciation rates, service lives, and retirement pattern used in the perpetual inventory calculations. Benchmark-type estimates prepared by other investigators for 1930 and 1940 were used to extend the period of comparison. The perpetual inventory and benchmark estimates are compared in table C. (In the Census years, the end-of-year perpetual inventory estimates were adjusted to the April 1 timing of the Censuses for comparison purposes.)

The benchmark estimates of net stocks are in terms of market values, while the perpetual inventory estimates of current-cost net stocks are based on replacement prices. While market values and replacement prices of residential structures are not conceptually identical, it is reasonable to assume that the forces of the market place will keep

Table C.—Comparison of Perpetual Inventory and Benchmark Estimates of Net Stocks of Nonfarm Housekeeping Residential Structures (Excluding Mobile Homes), Current Cost Valuation, Selected Years

[Billions of dollars]

Year	Perpetual inventory	Benchmark	Benchmarked perpetual inventory
1930 (Apr. 1)	84.4	[1] 82.0	82.0
1940 (Apr. 1)	90.0	[2] 70.0	79.0
1960 (Apr. 1)	208.4	177.5	212.6
1956 (Dec. 31)	327.1	334.0	345.6
1968 (Apr. 1)	399.9	411.6	405.2
1968 (Dec. 31)	641.3	639.8	645.3
1969 (Dec. 31)	703.9	696.4	706.2

1. Source: Grebler, Blank, and Winnick, *Capital Formation in Residential Real Estate*, National Bureau of Economic Research, 1966, based on an earlier estimate in David L. Winnick, *Residential Real Estate*, National Bureau of Economic Research, 1941.
2. Source: U.S. Bureau of the Census, *Housing—Special Report*, Series H-1943, No. 1, September 11, 1943, with structures-land allocation by OBE.

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15. Allen D. Manvel, "Trends in the Value of Real Estate and Land, 1956 and 1966," *Three Land Research Studies*, Research Report No. 12, U.S. National Commission on Urban Problems, 1968.

17. The methodology used in deriving the benchmark estimates benefits from work by Goldsmith and Lipsey and by Bhatia. See Goldsmith and Lipsey, *op. cit.*, and Kul B. Bhatia, *Individuals' Capital Gains in the United States, An Empirical Study, 1947-64*, unpublished Ph. D dissertation, University of Chicago, 1969.

18. The publicly owned portion of renter-occupied housing required a special treatment. Since public housing rents are subsidized, these rents needed to be adjusted upward before rent-to-value ratios for private rental housing could be applied to them. Available evidence suggested that the rental paid on a public unit was equal to about 48 percent of its true rental value, and the adjustment was based on this figure.

them fairly close most of the time. Thus, the comparisons in table C assume that the market-value concept of the benchmark estimates approximates the current-cost concept of the perpetual inventory estimates.

The perpetual inventory estimates match quite well with the benchmark estimates for 1930, 1956, and 1960, and with the extrapolations of the 1960 benchmark through 1969. Also, Manvel's estimates for one-family structures in 1956 and 1966 are reasonably close to the benchmark estimates when the benchmark estimates are adjusted to bring them as close as possible to Manvel's in timing and coverage.[19] In general, the results of these comparisons support the assumptions as to service lives, depreciation rates, and retirements used in the perpetual inventory calculations.

However, benchmark estimates based on the 1940 and 1950 Censuses of Housing do not closely match the perpetual inventory estimates. The 1940 benchmark figure is $10 billion (12 percent) lower than the perpetual inventory estimate, and the 1950 benchmark is about $30 billion (14 percent) lower.

The 1940 and 1950 benchmark figures are probably too low because the Housing Census benchmarks depend heavily on the ability of the homeowner to estimate the value of his house. It seems likely that homeowners understated the true values of their houses in 1940 and 1950 (particularly 1950) because inflation had driven housing values up more than owners realized—especially homeowners who had not bought or sold their houses recently.

Additional evidence supports the belief that the 1950 benchmark figure is too low. First, an attempt was made to match the 1960 benchmark with a perpetual inventory calculation benchmarked on 1950. Starting with the 1950 benchmark, the NIA investment data were added and the implied declining balance depreciation rate necessary to attain the 1960 benchmark was calculated. This rate turned out to be less than 1 percent, which does not seem

19. The Census of Governments tabulated about 80 million "urban" single-family units in 1956 and 40 million in 1966, compared with about 32 million and 42 million nonfarm single-family units based on the Census of Housing definitions. In the adjustment mentioned in the text, the additional units under the Census of Housing definitions were valued as rural nonfarm and deducted from the estimates benchmarked on the Census of Housing.

realistic. If this same rate were continued through the 1960's, the resulting net stock estimate in 1969 appears much too high.

Also, a "benchmarked perpetual inventory" series was constructed by starting with the 1930 benchmark, adding the NIA annual investment data, and subtracting annual estimates of depreciation and losses from the housing inventory. This series is shown in table C. The depreciation rates were those used in the perpetual inventory calculations, and the loss rates were based on decade estimates of losses by Grebler, Blank, and Winnick for the 1930's and 1940's and the 1960 Housing Census and extrapolations therefrom for the 1950's and 1960's. The resulting series matched quite well with all the perpetual inventory estimates and with all the benchmark estimates except 1940 and 1950.

Appendix

Brief explanation of terms

The following is a brief explanation of terms arising in the perpetual inventory stock estimates in this study.

Gross investment is the value of the purchases of new fixed residential capital assets (public and private, including mobile homes) in the United States. The investment flows used in estimating stocks in this study include commissions of brokers on transactions in new structures but not on used structures but data are provided to enable users to derive stock estimates including the latter. For a given sector of the economy, it covers also net purchases of used assets from other sectors (for instance, gross investment by the private nonfarm sector includes purchases, net of sales, of used assets from the private farm sector).

Discards are the value of gross investment that is retired.

Gross stocks are the value of the stocks of residential structures before deduction of losses in value through physical deterioration, obsolescence, and accidents. Gross stocks equal cumulative gross investment less cumulative discards.

Depreciation is the value lost through physical deterioration, obsolescence, and accident. This is synonymous with

the term capital consumption as defined in the national economic accounts, because it includes accidental damage to fixed capital in addition to depreciation proper.

Net stocks are the value of gross stocks less cumulated depreciation on assets in the gross stocks.

Age distribution of stock in a given year shows the percentage of that year's stock that consists of investment made in that year, in the previous year, etc.

Service life of a capital asset is the period from its purchase to its discard.

Straight line annual depreciation for a capital asset is equal to its gross value divided by its service life.

Declining balance annual depreciation rate is a fixed percentage, always applied to the depreciated value of the asset.

Historical cost measures values in the prices of the period in which the investment was made.

Constant cost measures values in constant prices (in this report, 1958 prices).

Current cost measures values in the prices of the given year.

Data sources

The annual investment flows used in implementing the perpetual inventory method were those which enter the estimates of the GNP for the years since 1929 and are taken from the following sources: 1929–63: *The National Income and Product Accounts of the United States, 1929–65, Statistical Tables* (A Supplement to the SURVEY OF CURRENT BUSINESS), August 1966; 1964–65: SURVEY OF CURRENT BUSINESS, July 1968; 1966: SURVEY OF CURRENT BUSINESS, July 1969; 1967–70: SURVEY OF CURRENT BUSINESS, July 1971. The definitions and methodology underlying these data are described in *National Income, 1954 Edition* (A Supplement to the SURVEY OF CURRENT BUSINESS), 1954; *U.S. Income and Output* (A Supplement to the SURVEY OF CURRENT BUSINESS), November 1958; "The National Income and Product Accounts of the United States: Revised Estimates, 1929–64," SURVEY OF CURRENT BUSINESS, August 1965. The latter three publications are out of print, but their methodological sections are reproduced in *Readings in*

Table 1.—Perpetual Inventory Estimates of Constant Dollar Gross and Net Stocks of Residential Structures and Mean Age of Stocks by Type of Structure, 1925–70

End of year	Gross stocks, by type of structure								Net stocks, by type of structure								Memoranda: Commissions on used structures	
	Total, all types	Private nonfarm 1–4 unit	Private nonfarm 5 or more unit	Public Federal	Public State and local	Farm	Private non-house-keeping	Mobile homes	Total, all types	Private nonfarm 1–4 unit	Private nonfarm 5 or more unit	Public Federal	Public State and local	Farm	Private non-house-keeping	Mobile homes	Gross stocks	Net stocks
Gross and net stocks (billions of 1958 dollars)																		
1925	346.3	278.2	29.5	0	0	37.2	8.4	0	215.5	174.8	16.9	0	0	19.9	4.0	0	0.4	5.9
1926	360.1	288.2	26.1	0	0	37.3	9.5	0	226.1	182.6	18.1	0	0	19.8	5.6	0	9.6	6.0
1927	373.0	297.3	27.0	0	0	37.5	10.3	0	236.1	188.7	20.5	0	0	19.8	6.1	0	9.8	6.1
1928	384.8	306.8	30.4	0	0	37.7	10.9	0	232.9	191.2	22.5	0	0	19.8	6.4	0	10.1	6.3
1929	392.9	311.5	32.0	0	0	37.9	11.5	0	247.0	197.0	22.6	0	0	19.7	6.7	0	10.2	6.5
1930	397.4	315.1	32.5	0	0	37.2	11.9	0	246.9	196.9	23.6	0	0	19.6	6.7	0	10.6	6.6
1931	400.6	317.9	32.9	0	0	37.5	12.0	0	245.6	196.3	23.5	0	0	19.2	6.5	0	10.7	6.6
1932	400.6	318.3	32.9	0	0	37.6	12.0	0	242.1	193.9	23.0	0	0	18.9	6.2	0	10.8	6.5
1933	400.7	318.3	32.9	0	0	37.4	12.0	0	237.4	190.4	22.6	0	0	18.5	5.9	0	10.9	6.6
1934	400.5	318.3	32.9	(*)	0	37.3	12.0	0	234.3	189.3	23.0	(*)	0	18.3	5.7	0	11.0	6.5
1935	401.6	319.5	32.9	(*)	0	37.2	12.0	0	232.2	187.0	21.6	(*)	0	18.1	5.5	0	11.1	6.5
1936	404.6	322.0	33.2	.2	0	37.1	12.1	0	231.5	187.0	21.4	.2	0	17.9	5.3	0	11.1	6.5
1937	408.2	324.9	33.6	.5	0	37.1	12.1	0	232.2	187.3	21.4	.5	0	17.8	5.2	0	11.2	6.5
1938	411.6	327.9	33.8	.8	(*)	37.1	12.1	0	232.3	187.8	21.2	.8	(*)	17.7	5.0	0	11.3	6.5
1939	417.0	332.4	34.4	.9	.2	37.2	12.2	0	234.5	180.9	21.3	.9	.2	17.6	4.9	0	11.4	6.5
1940	422.9	337.3	34.7	.8	.7	37.4	12.2	0	237.8	192.7	21.3	.8	.7	17.7	4.8	0	11.4	6.5
1941	429.9	343.3	35.0	1.1	1.2	37.1	12.2	0	241.8	195.9	21.2	1.1	1.2	17.7	4.7	0	11.5	6.5
1942	432.3	344.7	35.1	2.0	1.7	36.7	12.1	0	241.2	194.8	20.8	1.0	1.0	17.6	4.5	0	11.7	6.6
1943	434.9	346.0	35.1	3.5	1.8	36.6	11.9	0	238.0	191.0	20.5	3.5	1.5	17.5	4.2	0	11.8	6.0
1944	434.2	345.3	35.0	3.0	1.8	36.5	11.7	0	235.1	188.7	20.0	3.0	1.6	17.2	4.0	0	12.0	6.6
1945	434.5	345.0	34.9	4.0	1.8	36.2	11.4	.1	234.7	186.0	19.5	3.7	1.6	17.0	3.8	.1	12.2	6.6
1946	439.4	350.1	35.0	3.7	2.7	36.3	11.4	.2	237.0	192.4	19.3	3.3	2.4	16.8	3.7	.2	12.4	6.8
1947	451.5	351.6	35.3	3.4	3.3	36.2	11.3	.4	247.4	201.8	19.3	2.9	3.0	16.5	3.6	.3	12.6	7.0
1948	461.2	375.8	35.9	3.4	3.5	36.4	11.1	.6	256.9	211.1	19.5	2.9	3.1	16.5	3.5	.4	12.8	7.2
1949	490.2	389.1	36.8	3.4	3.7	36.5	11.0	.7	263.5	221.5	20.1	2.8	3.2	17.0	3.8	.4	13.0	7.4
1950	500.1	406.8	37.6	3.4	4.0	36.6	10.9	.8	283.6	237.4	20.6	2.7	3.6	17.5	3.4	.4	13.3	7.7
1951	515.3	421.3	38.8	3.4	4.5	36.5	10.7	.9	296.2	249.1	20.6	2.6	4.2	17.9	3.4	.4	13.6	8.0
1952	530.0	436.0	38.2	3.4	5.2	36.8	10.6	1.1	309.0	260.5	20.6	2.6	4.7	17.8	3.3	.5	14.0	8.3
1953	546.1	450.1	38.6	3.4	5.8	36.4	10.5	1.3	320.8	270.8	20.6	2.5	5.2	17.8	3.3	.6	14.4	8.7
1954	564.8	466.2	38.0	3.4	6.3	36.8	10.4	1.4	333.8	283.5	20.7	2.6	5.4	17.7	3.4	.8	14.7	9.0
1955	583.9	485.3	39.3	3.4	6.6	36.2	10.4	1.6	350.8	300.3	20.7	2.4	5.6	17.6	3.4	.8	15.2	9.4
1956	601.2	502.9	39.8	3.4	6.8	36.1	10.4	2.0	363.0	312.0	20.7	2.4	5.7	17.6	3.6	1.1	15.7	9.7
1957	618.0	518.2	40.2	3.6	7.1	36.6	10.6	2.4	375.1	323.2	21.0	2.5	5.0	17.4	3.8	1.3	16.2	10.0
1958	634.7	532.8	41.0	3.9	7.6	35.0	10.7	2.7	388.0	334.5	21.0	2.6	6.2	17.3	4.1	1.5	16.7	10.3
1959	663.8	559.0	42.8	4.4	8.0	35.8	11.0	3.2	405.1	352.3	22.6	3.2	6.5	17.2	4.6	1.8	17.1	10.6
1960	679.5	572.0	43.6	4.7	8.4	35.8	11.4	3.6	412.5	362.0	23.5	3.3	6.8	17.1	5.0	1.9	17.6	10.9
1961	690.5	579.5	45.6	5.0	8.0	35.7	11.9	3.0	427.6	367.0	25.2	3.6	7.2	17.0	5.6	2.0	18.3	11.3
1962	709.5	594.2	48.4	5.2	8.6	35.6	12.6	4.0	441.5	375.5	27.7	3.6	7.7	17.0	6.4	2.3	18.8	11.7
1963	728.7	609.1	51.6	5.5	9.9	35.3	13.5	5.0	455.7	387.0	30.5	3.7	7.7	17.0	7.1	2.7	19.4	12.1
1964	740.6	620.5	54.0	5.4	10.3	35.1	14.4	5.9	469.2	396.1	33.8	3.7	7.9	17.0	7.9	3.5	20.0	12.5
1965	769.0	638.5	57.3	5.5	10.7	34.9	15.3	6.9	483.2	406.1	35.7	3.7	9.3	17.0	8.6	3.9	20.6	13.0
1966	786.4	650.7	60.3	5.6	11.1	34.7	16.1	7.0	493.3	412.1	37.6	3.7	9.4	16.9	9.2	4.4	21.3	13.4
1967	802.2	663.0	62.6	5.6	11.7	34.5	16.8	6.1	503.9	419.0	39.2	3.6	9.9	16.9	9.6	5.1	21.7	13.8
1968	823.3	676.5	66.1	5.6	12.3	34.3	17.6	10.8	514.6	426.6	41.2	3.6	9.0	16.8	10.0	6.3	22.2	14.2
1969	843.3	691.7	70.1	5.7	13.0	34.2	18.2	13.4	526.0	433.4	45.5	3.6	9.4	16.7	10.4	8.0	23.1	14.6
1970	870.3	707.2	74.6	5.8	13.7	34.0	18.8	16.0	544.6	445.5	48.5	3.6	10.0	16.0	10.7	9.4	23.9	15.1
Mean age of gross and net stocks (years)																		
1925	27.0	25.4	16.7	0	0	36.9	10.5	0	20.2	20.1	12.8	0	0	27.0	6.7	0		
1926	26.5	25.3	15.8	0	0	36.3	10.4	0	19.9	19.8	11.4	0	0	27.4	6.3	0		
1927	26.0	25.2	16.0	0	0	36.6	10.5	0	19.0	19.6	10.7	0	0	27.6	6.3	0		
1928	26.6	25.3	14.7	0	0	37.0	10.4	0	19.6	19.5	10.4	0	0	27.9	6.5	0		
1929	26.8	26.5	14.8	0	0	37.4	10.7	0	19.9	19.7	10.6	0	0	28.2	6.8	0		
1930	27.3	27.0	15.4	0	0	37.8	11.0	0	20.1	20.2	11.3	0	0	28.7	7.2	0		
1931	27.8	27.5	16.1	0	0	38.4	11.7	0	20.6	20.7	12.0	0	0	29.3	7.9	0		
1932	28.5	28.2	17.0	0	0	39.0	12.4	0	21.4	21.4	12.9	0	0	30.0	8.7	0		
1933	29.2	28.9	17.9	0	0	39.7	13.0	0	22.1	22.1	13.8	0	0	30.7	9.4	0		
1934	29.9	29.6	18.7	.5	0	40.3	13.7	0	22.8	22.8	14.7	.5	0	31.4	10.1	0		
1935	30.4	30.2	19.5	.6	0	40.9	14.3	0	23.4	23.3	15.5	.6	0	31.9	10.7	0		
1936	30.9	30.8	20.2	.7	0	41.2	14.9	0	23.7	23.7	16.2	.7	0	32.3	11.2	0		
1937	31.3	31.0	20.8	1.0	0	41.6	15.4	0	24.0	24.0	16.9	1.0	0	32.8	11.6	0		
1938	31.6	31.4	21.4	1.6	.5	42.0	16.0	0	24.3	24.3	17.4	1.8	.8	32.9	12.0	0		
1939	31.0	31.6	21.0	2.2	.8	42.4	16.3	0	24.4	24.5	17.8	2.2	.8	33.2	12.3	0		
1940	32.0	31.7	22.4	2.7	.8	43.0	16.7	0	24.4	24.3	18.3	2.7	.8	33.8	12.6	0		
1941	32.1	31.8	23.0	2.8	1.0	43.5	17.2	0	24.3	24.1	18.8	2.6	1.2	34.2	12.9	0		
1942	32.5	32.2	23.7	2.4	1.4	44.1	17.7	0	24.6	24.5	19.5	2.5	1.4	34.9	13.4	0		
1943	33.0	32.9	24.5	2.1	2.7	44.8	18.4	0	25.1	25.2	20.5	2.0	2.6	35.8	14.2	0		
1944	33.5	33.5	25.5	2.0	3.6	45.6	19.1	0	25.7	25.8	21.1	2.9	3.6	36.7	14.9	0		
1945	34.2	34.1	26.1	3.8	4.5	46.4	19.7	.5	26.4	26.4	21.0	3.8	4.6	37.7	15.6	.5		
1946	34.1	33.9	26.0	5.1	4.1	46.5	20.0	.9	26.0	25.9	22.9	5.0	4.2	37.4	15.3	.9		
1947	33.7	33.6	26.0	6.5	4.7	46.5	20.4	1.2	25.3	25.0	22.4	6.5	4.5	36.9	14.8	1.1		
1948	33.2	32.9	27.0	7.7	5.8	46.3	20.8	1.5	25.4	24.1	22.2	7.7	5.4	36.2	14.4	1.4		
1949	32.8	32.4	27.0	8.6	6.0	46.2	21.1	2.3	23.7	23.3	21.9	8.6	5.7	35.6	14.3	1.9		
1950	32.3	31.5	22.0	9.4	6.4	46.2	21.3	2.8	22.7	22.1	21.6	8.0	6.2	35.3	15.1	2.3		
1951	31.6	31.0	27.4	10.6	6.3	46.2	21.6	2.1	22.0	21.5	21.9	10.6	6.8	34.8	14.9	2.5		
1952	31.3	30.6	27.3	11.6	6.3	46.3	21.9	3.6	21.6	20.9	22.1	11.8	5.8	34.7	14.7	2.5		
1953	30.9	30.1	28.2	12.5	4.6	46.4	21.9	3.8	21.1	20.5	22.4	12.5	6.0	34.6	14.2	2.5		
1954	30.5	29.6	28.6	13.6	7.1	46.6	21.8	4.0	20.7	19.9	22.6	13.5	6.5	34.5	13.6	2.5		
1955	30.0	29.0	29.0	14.5	7.3	46.8	21.5	3.5	20.1	19.3	22.9	14.5	7.2	34.7	12.0	2.2		
1956	29.5	28.6	29.3	16.5	8.4	47.0	21.3	3.5	19.8	18.9	23.1	15.4	7.7	34.7	11.8	2.0		
1957	29.4	28.4	29.5	16.8	8.4	47.3	20.7	3.4	19.5	18.6	23.0	15.4	8.2	34.8	10.3	2.0		
1958	29.3	28.2	29.6	16.3	9.3	47.6	19.9	3.4	19.4	18.5	22.7	14.4	8.6	35.0	10.3	2.2		

Table 1.—Perpetual Inventory Estimates of Constant Dollar Gross and Net Stocks of Residential Structures and Mean Age of Stocks, by Type of Structure, 1925–70—Continued

End of year	Gross stocks, by type of structure							Net stocks, by type of structure							Memoranda: Commissions on used structures[1]	
	Total, all types	Private nonfarm		Public		Farm	Private non-house-keep-ing	Mobile homes	Total, all types	Private nonfarm		Public		Farm	Private non-house-keep-ing	Mobile homes	Gross stocks	Net stocks
		1–4 unit	5 or more unit	Fed-eral	State and local					1–4 unit	5 or more unit	Fed-eral	State and local					
	Mean age of gross and net stocks (years)—Continued																	
1959	28.9	27.6	29.2	14.6	9.7	47.3	10.0	3.4	19.1	18.3	29.0	13.2	9.8	35.2	9.2	2.3		
1960	28.7	27.7	28.5	14.7	10.2	48.0	18.0	3.6	19.0	18.3	31.3	13.0	9.2	35.4	8.4	2.5		
1961	28.4	27.6	27.0	14.0	10.5	48.2	16.0	3.9	18.9	18.3	28.0	13.0	9.4	35.4	7.7	2.7		
1962	28.2	27.6	26.8	15.3	10.7	48.3	15.9	4.1	18.7	18.2	18.5	13.3	9.5	35.4	7.1	2.8		
1963	28.1	27.4	25.3	15.9	11.2	48.5	14.6	4.1	18.6	18.2	16.7	13.3	10.0	35.4	6.6	2.8		
1964	27.9	27.3	24.0	16.6	11.7	48.7	13.6	4.1	18.5	18.2	15.4	14.6	10.4	35.5	6.3	2.8		
1965	27.7	27.2	23.1	17.2	12.3	48.6	12.6	4.2	18.4	18.3	14.6	14.9	10.0	35.6	6.2	2.6		
1966	27.7	27.3	22.4	18.0	12.7	49.0	12.2	4.3	18.5	18.4	14.0	15.6	11.2	35.6	6.2	2.6		
1967	27.7	27.4	22.0	18.0	13.0	49.6	11.9	4.4	18.6	18.6	13.3	16.3	11.4	35.6	6.4	2.9		
1968	27.6	27.4	21.3	18.7	13.4	49.1	11.8	4.5	18.6	18.7	13.3	17.3	11.7	35.4	6.6	2.8		
1969	27.6	27.5	20.4	20.4	13.7	49.1	11.5	4.2	18.6	19.0	12.6	17.6	11.8	35.3	6.8	2.7		
1970	27.6	27.7	19.7	21.1	13.9	49.0	11.5	4.2	18.7	19.1	12.2	18.6	11.9	35.1	7.1	2.8		

*Less than $0.05 billion.
1. These commissions apply to the "private nonfarm 1–4 unit" and "total, all types" stocks (see text, page 17).

Table 2.—Perpetual Inventory Estimates of Current Dollar Gross and Net Stocks of Residential Structures, by Type of Structure, 1925–70

End of year	Gross stocks, by type of structure							Net stocks, by type of structure							Memoranda: Commissions on used structures[1]	
	Total, all types	Private nonfarm		Public		Farm	Private non-house-keep-ing	Mobile homes	Total, all types	Private nonfarm		Public		Farm	Private non-house-keep-	Mobile homes	Gross stocks	Net stocks
		1–4 unit	5 or more unit	Fed-eral	State and local					1–4 unit	5 or more unit	Fed-eral	State and local					
	Gross and net stocks (billions of dollars)																	
1925	127.9	101.7	8.2	0	0	14.8	3.1	0	79.5	64.0	5.9	0	0	7.9	1.8	0	3.1	2.0
1926	131.5	105.3	8.2	0	0	14.6	3.5	0	83.2	66.0	6.6	0	0	7.9	2.1	0	3.1	2.0
1927	136.3	109.1	10.1	0	0	14.4	3.7	0	86.0	68.5	7.5	0	0	7.8	2.2	0	3.2	2.1
1928	143.6	113.8	11.3	0	0	14.4	4.1	0	90.7	72.1	8.4	0	0	7.8	2.4	0	3.3	2.1
1929	147.4	117.1	12.0	0	0	14.0	4.3	0	92.8	73.8	8.0	0	0	7.6	2.5	0	3.4	2.2
1930	140.4	111.6	11.5	0	0	13.2	4.2	0	87.3	60.7	8.4	0	0	6.6	2.4	0	3.5	2.2
1931	122.2	97.1	10.1	0	0	11.3	3.7	0	75.1	60.1	7.2	0	0	5.6	2.3	0	3.5	2.2
1932	109.1	86.0	9.0	0	0	9.9	3.3	0	65.9	53.0	6.3	0	0	4.9	1.7	0	3.4	2.1
1933	114.3	91.2	9.4	0	0	10.2	3.4	0	68.0	54.7	5.4	0	0	5.2	1.7	0	3.4	2.1
1934	110.3	95.4	8.8	(*)	0	10.5	3.6	0	70.2	56.4	5.8	(*)	0	5.5	1.7	0	3.4	2.0
1935	121.8	97.5	10.6	(*)	0	10.6	3.7	0	70.9	57.0	6.6	(*)	0	5.6	1.7	0	3.4	2.0
1936	132.3	105.4	10.9	.1	0	11.3	4.0	0	78.6	61.4	7.0	.1	0	5.8	1.7	0	3.6	2.1
1937	142.3	114.0	11.8	.2	0	12.1	4.2	0	80.0	63.6	7.5	.2	0	5.8	1.8	0	3.8	2.2
1938	146.4	117.5	12.1	.2	(*)	12.2	4.3	0	82.4	67.2	7.6	.2	(*)	5.6	1.8	0	4.1	2.3
1939	151.4	121.7	12.6	.2	.1	12.3	4.5	0	85.0	69.4	7.8	.2	.1	6.7	1.8	0	4.3	2.4
1940	162.0	131.3	13.5	.2	.3	12.0	4.7	0	91.7	74.0	8.8	.2	.3	6.1	1.9	0	4.6	2.6
1941	175.8	144.3	14.7	.5	.6	14.2	5.1	0	101.3	82.4	8.0	.4	.6	6.0	2.0	0	4.9	2.7
1942	195.1	155.4	15.8	.9	1.7	15.6	5.5	0	108.9	86.0	9.4	.8	.9	7.0	2.0	0	5.1	2.9
1943	211.5	168.2	17.2	1.7	1.8	16.6	5.6	0	117.3	93.9	10.0	1.6	.8	8.9	2.1	0	5.4	3.1
1944	226.2	181.3	18.5	2.0	1.0	17.2	6.2	0	124.9	99.7	10.0	1.9	.8	9.7	2.1	0	5.7	3.3
1945	242.4	194.8	19.9	2.3	1.9	18.9	6.5	(*)	132.3	105.9	11.1	3.1	.0	10.2	2.1	(*)	6.0	3.5
1946	265.7	223.8	22.0	2.4	1.7	23.3	7.5	.1	155.0	125.3	12.6	2.1	1.5	11.9	2.4	.1	6.6	4.0
1947	312.6	274.4	25.3	2.6	2.4	27.5	8.6	.3	187.9	152.1	14.6	2.3	2.2	13.0	2.7	.2	7.8	4.6
1948	349.2	297.8	28.5	2.7	2.8	28.5	8.5	.5	205.2	167.7	15.8	2.3	2.3	14.4	2.8	.3	8.5	4.3
1949	383.2	312.0	29.6	2.7	3.0	20.4	8.9	.6	218.4	177.8	16.2	2.3	2.6	14.6	2.9	.6	9.8	4.3
1950	428.4	347.8	30.1	2.9	3.4	32.2	9.3	.7	244.6	202.8	17.6	2.3	3.1	15.4	2.9	.4	10.8	5.4
1951	455.0	378.6	34.0	3.0	5.9	33.8	9.6	.8	268.0	223.5	18.0	2.4	3.8	16.4	3.0	.4	11.8	7.0
1952	486.8	396.1	36.0	3.1	5.9	34.0	9.7	1.0	282.7	237.9	18.9	2.3	4.6	16.7	3.0	.5	11.8	7.4
1953	498.8	410.8	35.1	3.1	5.4	34.0	9.6	1.2	292.9	247.5	18.8	2.3	4.8	17.0	3.0	.5	13.3	7.9
1954	517.1	427.7	35.7	3.1	5.8	34.0	9.6	1.3	306.3	261.1	18.9	2.3	5.2	17.1	3.1	.6	12.9	8.2
1955	555.7	468.4	37.4	3.2	6.4	35.0	9.8	1.6	335.6	289.5	19.7	2.3	5.4	17.5	3.3	.7	13.4	8.7
1956	593.7	496.0	30.0	3.4	6.8	35.4	10.2	1.0	359.4	306.6	20.4	2.3	5.8	17.7	3.5	1.0	14.6	9.2
1957	618.4	517.7	40.1	3.6	7.2	37.0	10.5	2.3	376.7	324.3	21.0	2.5	6.0	17.8	3.6	1.3	15.6	9.8
1958	645.1	540.9	41.6	4.0	7.8	37.2	10.8	2.7	385.4	340.6	21.0	2.8	6.5	17.9	4.2	1.6	16.7	10.3
1959	689.0	576.8	43.0	4.0	9.5	37.6	11.4	3.2	368.8	364.8	23.4	3.3	6.0	18.0	4.7	1.8	17.6	10.8
1960	713.6	600.5	46.6	4.9	9.9	37.7	11.0	3.6	440.0	380.4	24.0	3.5	7.1	18.1	4.8	1.9	18.6	11.3
1961	731.6	624.1	48.2	5.3	9.6	37.9	12.6	3.9	458.4	383.2	24.7	3.7	7.7	18.1	6.0	2.0	20.0	12.0
1962	765.7	641.3	52.2	5.5	10.6	38.0	13.6	4.4	477.6	407.0	29.8	3.9	8.4	19.3	6.9	2.3	21.5	12.7
1963	807.5	676.1	57.2	5.8	11.2	38.8	14.9	5.0	505.1	428.5	33.7	4.0	8.7	19.6	7.0	2.7	22.5	13.5
1964	848.0	707.2	62.2	5.9	12.1	38.4	16.3	5.9	533.2	450.1	37.7	4.1	9.3	19.7	8.9	3.3	24.0	14.4
1965	888.9	730.0	67.0	6.2	12.9	30.5	16.7	9.9	569.7	470.2	41.4	4.2	9.7	20.3	10.0	3.9	25.5	15.4
1966	941.6	762.1	72.6	6.5	13.9	39.5	19.4	7.0	593.0	497.1	45.2	4.3	10.4	20.6	11.1	4.4	27.0	16.6
1967	1,000.6	806.5	79.0	6.9	15.3	42.0	21.3	9.1	633.5	530.6	49.6	4.6	11.3	21.2	12.1	5.1	28.8	17.7
1968	1,094.4	903.3	88.4	7.4	16.7	44.3	23.4	10.9	693.6	567.9	66.4	4.7	12.3	21.8	13.4	6.3	31.0	18.9
1969	1,197.3	983.4	100.3	8.0	18.9	47.7	26.6	12.4	749.6	630.0	65.1	5.0	16.8	23.0	14.5	8.0	32.3	20.1
1970	1,284.7	1,050.2	111.1	8.6	20.6	50.6	27.9	16.0	804.2	661.6	73.2	6.3	14.9	24.7	15.9	9.6	34.0	21.4

*Less than $0.05 billion.
1. These commissions apply to the "private nonfarm 1–4 unit" and "total, all types" stocks (see text, page 17).

Concepts and Methods of National Income Statistics, a reprint volume published for OBE in 1970 by the National Technical Information Service, U.S. Department of Commerce.

The investment flows were extended back into the nineteenth century using related data prepared by Government agencies and private researchers. The most important sources were: U.S. Department of Commerce and U.S. Department of Labor, *Construction Volume and Costs, 1915–1956*, 1958; David M. Blank, *The Volume of Residential Construction, 1889–1950*, National Bureau of Economic Research, 1954; and U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1957*, 1960.

These investment flows represent the value of new residential construction put in place, net purchases of used structures, and brokers' commissions on the sale of structures. The sources of the current-dollar data are given below by type of residential structure.

Private nonfarm structures, 1–4 units and 5 or more units. The value of construction put in place for new structures is derived by the Bureau of the Census from a monthly survey of housing starts. The value of new units started in a given month is derived from building permit data, and this value is distributed over the following 12 months on the basis of fixed progress patterns. Expenditures for additions and alterations expenditures are determined by a quarterly Census Bureau household survey. These series for new housing units and additions and alterations were allocated by OBE between 1–4 unit structures and 5 or more unit structures using data from building permits and FHA records. Net purchases of used structures by this sector are derived from the data on net purchases described below under publicly owned structures and farm structures. Brokers' commissions on the sales of both new and used structures are estimated by OBE from data from Government and trade sources.

Publicly owned structures, Federal and State and local. Public expenditures on new residential construction are estimated from monthly Census Bureau surveys of Federal Government agencies, State governments, and a sample of local governments. Expenditure data are lagged one month to produce value-put-in-place estimates. Net purchases of used structures are estimated by OBE from expenditure data of certain Federal agencies and State and local governments.

Farm structures. New construction estimates are derived by the U.S. Department of Agriculture from farm expenditure surveys. Transfers of farm housing to nonfarm use during the last three decades were estimated by OBE from the decennial Censuses of Housing.

Private nonhousekeeping units. Monthly estimates of new construction put in place are derived by the Census Bureau from contract award data using fixed monthly construction progress patterns.

Mobile homes. Data on manufacturers' shipments of mobile homes from trade sources are raised to average retail values by OBE.

These current-dollar data are deflated to constant (1958) dollars using the price indexes described below. These price indexes are also used to revalue the stock estimates in constant (1958) prices to current-year prices.

Starting in 1963, the Census Bureau's index of the price of new one-family houses sold is used to deflate residential investment. This index is based on a survey of sales prices and characteristics

Table 3.—Age Distribution of Constant Dollar Gross Stocks of Residential Structures (Perpetual Inventory Estimates) and Ratio of Net to Gross Stocks, by Type of Structure, Selected Years, 1925–70

End of year	Age distribution of gross stocks (percent)								Net/ gross ratio
	Age (years)								
	1–5	6–10	11–20	21–30	31–40	41–50	51–60	61 or more	
Total, all types									
1925	16.1	6.6	19.8	16.1	17.3	10.7	7.3	5.7	0.69
1930	14.3	14.1	14.2	16.1	14.2	13.4	6.7	7.0	.65
1935	3.6	14.2	19.6	17.1	13.6	14.4	8.6	9.0	.55
1940	3.1	3.5	20.7	13.2	14.7	13.4	11.4	10.0	.56
1945	5.6	7.0	16.6	16.1	15.4	11.8	12.1	12.5	.54
1950	17.1	4.9	9.7	22.4	10.8	11.6	0.4	14.1	.57
1955	17.6	14.6	10.0	12.1	18.1	10.6	7.3	14.2	.60
1960	16.1	15.4	25.3	7.1	16.3	7.5	7.8	13.6	.62
1965	15.0	14.1	24.6	7.5	8.9	9.9	7.6	12.6	.65
1970	13.1	14.0	24.6	12.7	4.4	12.1	6.3	12.6	.68
Private nonfarm 1–4 units									
1925	15.7	5.9	20.2	16.1	18.6	10.6	7.0	4.7	.63
1930	12.8	14.7	12.8	16.5	14.3	14.4	6.1	6.4	.62
1935	4.0	12.6	19.6	17.5	13.5	15.1	8.5	8.3	.58
1940	3.3	3.7	21.5	12.7	14.0	12.3	12.2	9.4	.57
1945	5.3	8.3	14.3	18.0	14.7	11.6	12.6	12.3	.54
1950	18.5	4.6	10.0	21.0	10.2	11.6	9.2	14.1	.58
1955	18.4	14.4	9.8	11.4	12.5	10.4	7.4	13.9	.62
1960	17.0	16.5	16.6	7.3	15.4	6.8	7.5	13.9	.63
1965	14.6	15.0	26.4	7.3	8.4	9.0	7.3	12.2	.64
1970	11.8	13.3	27.3	13.2	5.5	11.7	5.0	12.4	.65
Private nonfarm 5 or more units									
1925	31.8	7.9	25.6	16.0	11.8	6.8	1.5	.3	.71
1930	32.0	21.9	14.9	13.9	7.5	7.9	1.6	.3	.73
1935	2.9	31.7	28.9	16.9	6.7	7.2	8.9	.8	.66
1940	7.3	2.7	50.4	13.8	12.6	6.3	6.0	1.1	.61
1945	3.6	7.1	32.4	25.3	15.5	8.3	5.6	2.0	.58
1950	11.9	2.8	8.9	46.3	11.9	10.2	4.6	4.4	.56
1955	7.7	11.4	3.9	27.0	21.3	12.1	5.6	4.9	.53
1960	14.9	6.9	12.7	7.8	37.8	9.2	7.2	4.7	.55
1965	31.4	9.0	32.4	5.7	17.2	12.7	6.4	6.2	.62
1970	28.0	23.4	11.0	8.7	3.8	16.3	3.9	3.9	.65
Farm									
1925	4.5	8.3	14.2	17.0	18.5	12.6	10.8	14.3	.53
1930	4.9	4.5	16.4	14.9	18.1	20.0	14.0	17.2	.51
1935	1.5	6.1	14.0	14.4	17.1	15.2	11.7	20.7	.48
1940	3.3	1.6	9.8	17.0	15.4	15.1	9.7	24.9	.46
1945	.2	3.6	7.9	15.0	16.3	17.7	15.0	26.0	.47
1950	7.7	.4	6.9	10.1	17.5	15.4	17.4	24.8	.45
1955	0.0	7.3	8.7	7.2	16.7	14.6	18.3	30.2	.49
1960	3.8	8.7	8.4	3.6	10.4	17.5	14.8	32.6	.48
1965	4.7	4.0	14.2	4.0	7.6	15.0	14.3	35.2	.49
1970	4.6	4.1	10.2	10.4	6.1	10.6	17.0	37.0	.49

Table 4.—Alternative Estimates of Residential Capital Consumption, Nonfarm and Farm, 1925–70

[Billions of dollars]

Year	Total of nonfarm and farm			Nonfarm			Farm		
	NIA	Perpetual inventory		NIA	Perpetual inventory		NIA	Perpetual inventory	
		Historical cost	Current cost		Historical cost	Current cost		Historical cost	Current cost
1925	n.a.	1.1	1.8	n.a.	1.0	1.8	n.a.	0.1	0.2
1926	n.a.	1.1	1.9	n.a.	1.0	1.7	n.a.	.1	.2
1927	n.a.	1.2	1.9	n.a.	1.1	1.7	n.a.	.1	.2
1928	n.a.	1.3	2.0	n.a.	1.2	1.8	n.a.	.1	.2
1929	1.7	1.4	2.1	1.5	1.3	1.9	.2	.1	.2
1930	1.5	1.4	2.1	1.5	1.3	1.9	.3	.1	.2
1931	1.7	1.4	1.9	1.5	1.3	1.7	.1	.1	.2
1932	1.7	1.4	1.5	1.6	1.3	1.4	.1	.1	.1
1933	1.7	1.4	1.4	1.6	1.3	1.3	.1	.1	.1
1934	1.7	1.4	1.7	1.5	1.3	1.5	.2	.1	.3
1935	1.7	1.4	1.5	1.6	1.3	1.5	.2	.1	.1
1936	1.8	1.4	1.7	1.6	1.3	1.6	.2	.1	.1
1937	1.8	1.4	1.9	1.6	1.3	1.7	.2	.1	.2
1938	1.9	1.4	1.9	1.7	1.3	1.8	.2	.1	.1
1939	1.8	1.4	2.0	1.7	1.3	1.9	.1	.1	.2
1940	1.9	1.5	2.1	1.7	1.3	1.9	.2	.1	.2
1941	2.0	1.5	2.3	1.8	1.4	2.1	.2	.1	.2
1942	2.1	1.5	2.5	1.9	1.4	2.3	.2	.1	.2
1943	2.1	1.5	2.5	1.9	1.4	2.4	.2	.1	.2
1944	2.2	1.5	2.9	1.9	1.4	2.6	.3	.1	.2
1945	2.2	1.5	3.0	1.9	1.4	2.7	.3	.1	.2
1946	2.4	1.5	3.5	2.1	1.5	3.0	.3	.1	.3
1947	2.7	1.7	4.1	2.3	1.6	3.8	.4	.1	.3
1948	2.9	1.9	4.8	2.5	1.8	4.4	.4	.1	.4
1949	3.1	2.2	4.9	2.7	2.0	4.5	.4	.2	.4
1950	3.4	2.6	5.5	3.0	2.4	5.0	.4	.2	.5
1951	4.0	2.9	6.1	3.4	2.7	5.7	.6	.2	.4
1952	4.2	3.2	6.5	3.7	3.0	6.1	.5	.2	.4
1953	4.6	3.5	6.9	4.1	3.3	6.4	.5	.2	.4
1954	5.1	3.8	7.6	4.6	3.6	6.5	.5	.2	.5
1955	5.5	4.2	7.6	5.0	4.0	7.0	.5	.2	.5
1956	5.8	4.6	8.2	5.3	4.4	7.7	.5	.2	.5
1957	6.3	5.0	8.7	5.7	4.8	8.3	.6	.2	.4
1958	6.7	5.5	9.0	6.1	5.1	8.5	.6	.2	.5
1959	7.1	5.7	9.1	6.5	5.5	9.1	.6	.2	.5
1960	7.6	6.1	10.1	7.0	5.9	9.6	.6	.2	.5
1961	8.0	6.4	10.4	7.4	6.2	9.9	.6	.2	.5
1962	8.5	6.8	10.9	7.9	6.6	10.4	.6	.2	.5
1963	9.1	7.3	11.6	8.4	7.1	11.0	.7	.2	.6
1964	9.6	7.7	12.2	8.9	7.3	11.7	.7	.2	.5
1965	10.2	8.2	12.8	9.4	8.0	12.3	.8	.3	.6
1966	10.5	8.7	13.5	9.8	8.5	13.0	.7	.3	.5
1967	11.1	9.1	14.5	10.3	8.9	14.0	.8	.2	.5
1968	11.6	9.6	15.6	10.8	9.4	15.1	.8	.3	.5
1969	12.3	10.2	17.1	11.4	10.0	16.5	.9	.2	.6
1970	13.0	10.7	18.2	12.0	10.5	17.6	1.0	.2	.6

n.a. Not available.

of new one-family houses sold. The average sales prices are adjusted for changing proportions of cost-associated physical characteristics of houses to produce the price index. This index is adjusted for changes in site values using FHA data to produce the deflator. (See the reference in footnote 7 for a detailed description of the index.) For years prior to 1963, the privately-compiled Boeckh (residences) index is used as the residential deflator. It is an index of residential construction costs, representing a weighted average of construction wage rates and materials prices.

Most of the major components of income showed little change in October. Rent, interest, and dividends, which typically rise by small amounts, were unchanged. Farm proprietors' income

fell slightly after several months of large gains, and transfers declined $½ billion after having been swelled in September by a $1 billion nonrecurring payment. Wage and salary disbursements rose $1¼ billion, with manufacturing payrolls up more than $1 billion and others were generally little changed. In manufacturing, the increase in pay reflected a rise in weekly hours in some higher paying durable goods industries.

Production and Employment in October

Industrial output was virtually unchanged from September to October. Thus far this year, the Federal Reserve's index of total production has fluctuated within the narrow range of 105 to 107 percent of its 1967 base (chart 3). The index had been edging

up in the spring, but was depressed in July and August by steep reductions in steel output. Steel production recovered in September and October, and though still considerably below normal levels, it is no longer a drag on the aggregate index.

Private housing starts edged up slightly in October to a seasonally adjusted annual rate of 2 million units. All of the increase was in multi-family units; starts of single family units were unchanged from September to October. Starts were modestly higher in all regions except the West, where there has been recent evidence of some overbuilding. Building permits, which had declined slightly from July to September, rose sharply in October, with increases in permits for both single family and multi-family units.

Unemployment declines

Labor market indicators showed some improvement in October as unemployment edged down to 5.8 percent of the civilian labor force (seasonally adjusted) and employment expanded by 320,000 persons. This was the fourth consecutive monthly gain in employment and brought the figure to 79.8 million, up 1¼ million from the level that had been maintained for a year or more up to mid-1971.

The October reduction in unemployment was due largely to a decline in the number of workers who had been laid off and was concentrated among adult men. The unemployment rate for married men fell from 3.3 percent to 3.0 percent, its lowest level in a year. However, the rates for adult women (5.5 percent) and teenagers (17 percent) were little changed. Also, the number unemployed 15 weeks or longer was unchanged in October for the third consecutive month.

The number of workers on nonagricultural payrolls would have risen by about 85,000 in October had there not been a net increase in the number of workers on strike. Because of the increase in strikers, the employment total as reported in the payroll survey was unchanged, following a large gain of 375,000 in September. The average workweek in the private economy lengthened to 37.1 hours in October, more than offsetting a decline to 36.7 hours in September.